

Name _____

Date _____

Review for Quiz on Circles, Ellipses, and Hyperbolas. #1

Complete the following problems on loose leaf or in your notebook. It will be collected.

Write the equation of the circle using the given information.

1. Center: $(-11, -8)$ Radius: 4
2. Center: $(-6, -15)$ Radius: $\sqrt{5}$
3. Ends of a diameter: $(-9, 14)$ and $(5, 2)$
4. Center: $(14, 17)$ Point on Circle: $(15, 17)$

Write the equation of the ellipse using the given information.

5. Endpoints of major axis: $(4, 18)$, $(4, -4)$ Endpoints of minor axis: $(12, 7)$, $(-4, 7)$
6. Foci: $(\sqrt{17}, 0)$, $(-\sqrt{17}, 0)$ Endpoints of major axis: $(9, 0)$, $(-9, 0)$
7. Foci: $(7, 9)$, $(-1, 9)$ Endpoints of the minor axis: $(3, 12)$, $(3, 6)$
8. Center: $(6, -5)$ Vertex: $(6, 7)$ Focus: $(6, -5 - 6\sqrt{3})$

Write the equation of the hyperbola using the given information.

9. $9x^2 - 4y^2 - 90x + 32y - 163 = 0$
10. Vertices: $(8, 14)$, $(8, -10)$ Conjugate Axis is 6 units long
11. Vertices: $(7, 4)$, $(7, -24)$ Distance from Center to Focus = $7\sqrt{5}$
12. $-16x^2 + 9y^2 + 32x + 144y - 16 = 0$

Graph #9 on graph paper and list the center, the foci, the vertices, and the equations of the asymptotes.

Graph #7 on graph paper and list the center and foci.

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1. $16 = (x+11)^2 + (y+8)^2$

2. $5 = (x+6)^2 + (y+15)^2$

3. $(-9, 14), (5, 2)$

$C\left(\frac{-9+5}{2}, \frac{14+2}{2}\right)$

$C(-2, 8)$

$(x+2)^2 + (y-8)^2 = r^2$

$(-5+2)^2 + (2-8)^2 = r^2$

$49 + 36 = r^2$

$(x+2)^2 + (y-8)^2 = 85$

4. $(x-14)^2 + (y-17)^2 = r^2 \quad (15, 17)$

$(15-14)^2 + (17-17)^2 =$

$1 = r^2$

$(x-14)^2 + (y-17)^2 = 1$

5. $(4, 18), (4, -4), (12, 7), (-4, 7)$

$C(4, 7)$

$\frac{(x-4)^2}{64} + \frac{(y-7)^2}{121} = 1$

$a=11$

$b=8$

6. $(\sqrt{17}, 0), (-\sqrt{17}, 0)$

Major $(9, 0), (-9, 0)$

$81 = b^2 + 17$

$C(0, 0)$

$\frac{x^2}{81} + \frac{y^2}{64} = 1$

$64 = b^2$

7. $F(7, 9)(-1, 9)$ $M_{\text{center}}(3, 12)(3, 6)$

$C(3, 9)$

$c = 4$

$b = 3$

$a^2 = 16 + 9$

25

$$\frac{(x-3)^2}{25} + \frac{(y-9)^2}{9} = 1$$

8. $C(6, -5)$ $V(6, 7)$ $F(6, -5-6\sqrt{3})$

$$\frac{(x-6)^2}{36} + \frac{(y+5)^2}{144} = 1$$

$a = 12$

$b =$

$c = 6\sqrt{3}$

$144 = (6\sqrt{3})^2 + b^2$
 108

$36 = b^2$

9. $9x^2 - 90x - 4y^2 + 32y = 163$

$9(x^2 - 10x + 25) - 4(y^2 - 8y + 16) = 163 + 225 - 64$

$9(x-5)^2 - 4(y-4)^2 = 324$

$$\frac{(x-5)^2}{36} - \frac{(y-4)^2}{81} = 1$$

10. $C(8, 2)$ $2b = 6$ $a = 12$
 $b = 3$

$$\frac{(y-2)^2}{144} - \frac{(x-8)^2}{9} = 1$$

11. $C(7, -10)$

$a = 14$

$(7\sqrt{5})^2 = 14^2 + b^2$

$$\frac{(y+10)^2}{196} - \frac{(x-7)^2}{49} = 1$$

$c = 7\sqrt{5}$

$245 = 196$

$49 = b^2$

$$12. \quad -16x^2 + 32x + 9y^2 + 144y = 16$$

$$9(y^2 + 16y + 64) - 16(x^2 - 2x + 1) = 16 + 576 - 16$$

$$9(y+8)^2 - 16(x-1)^2 = 576$$

$$\frac{(y+8)^2}{64} - \frac{(x-1)^2}{36} = 1$$

#9

$$\frac{(x-5)^2}{36} - \frac{(y-4)^2}{81} = 1$$

C(5,4)

a=6

$$c^2 = 36 + 81$$

117

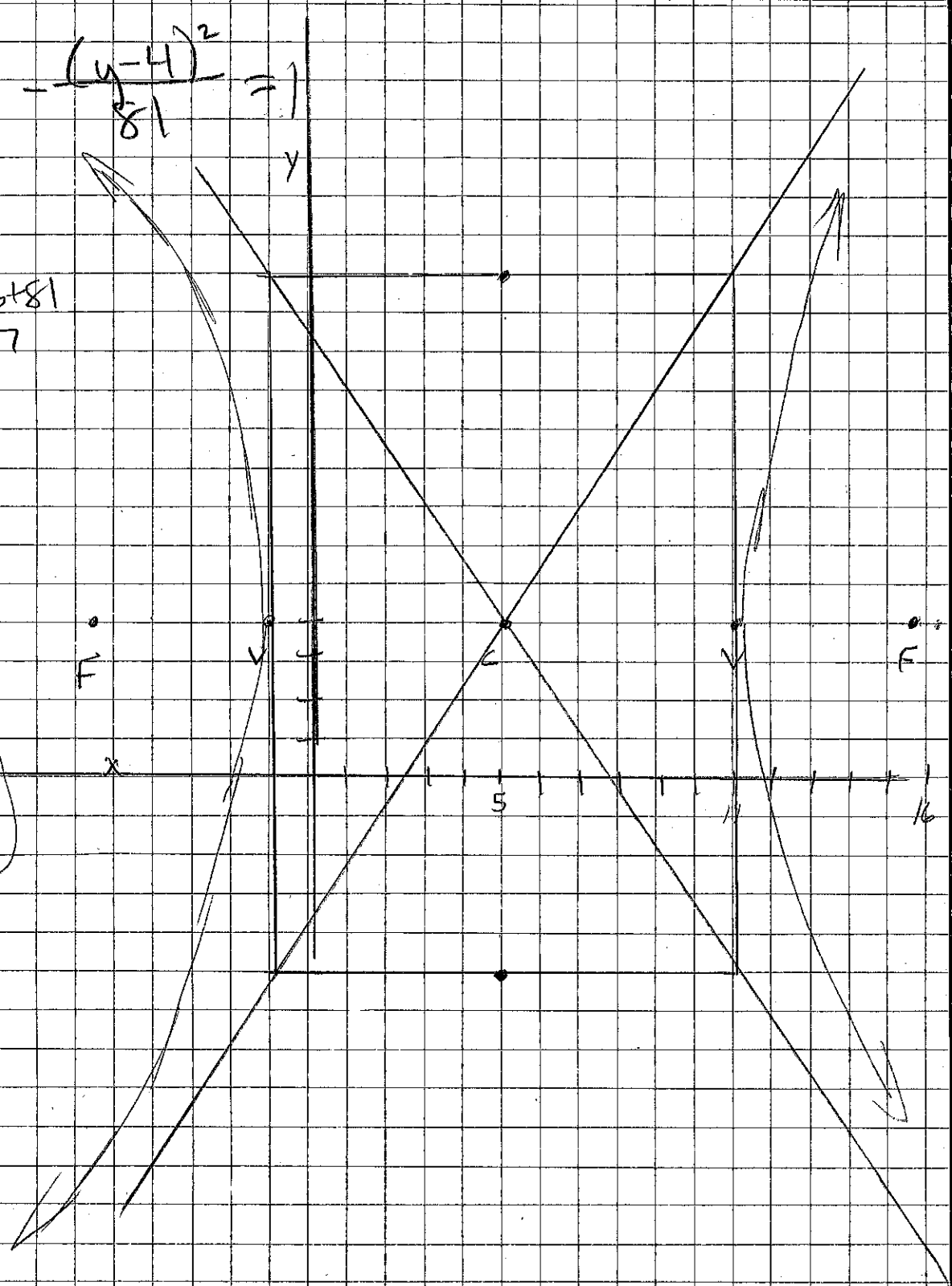
b=9

V(-1,4) (11,4)

F(5 ± 3√3, 4)

asymptotes

$$y - 4 = \pm \frac{3}{2}(x - 5)$$



$$7. \frac{(x-3)^2}{25} + \frac{(y-9)^2}{9} = 1$$

$$C(3,9) \quad 25 = a^2$$

$$16 = b^2$$

$$F(-1,9)$$

$$F(7,9)$$

y

